

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference <b>0113.100</b>	<b>FOR FURTHER ACTION</b> see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. <b>PCT/US 99/ 18394</b>	International filing date (day/month/year) <b>12/08/1999</b>	(Earliest) Priority Date (day/month/year) <b>12/08/1998</b>
Applicant <b>MAXYGEN, INC.</b>		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.  
☒ It is also accompanied by a copy of each prior art document cited in this report.

## 1. Basis of the report

- a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).
- b. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international search was carried out on the basis of the sequence listing:
- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☒ furnished subsequently to this Authority in written form.
- ☒ furnished subsequently to this Authority in computer readable form.
- ☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☒ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.
2. ☐ Certain claims were found unsearchable (See Box I).
3. ☐ Unity of invention is lacking (see Box II).

## 4. With regard to the title,

- ☒ the text is approved as submitted by the applicant.
- ☐ the text has been established by this Authority to read as follows:

## 5. With regard to the abstract,

- ☒ the text is approved as submitted by the applicant.
- ☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

## 6. The figure of the drawings to be published with the abstract is Figure No.

- ☐ as suggested by the applicant.
- ☒ because the applicant failed to suggest a figure.
- ☐ because this figure better characterizes the invention.

1  
☐ None of the figures.

## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 99/18394

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 C12N15/82 C12N15/10

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 C12N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 98 31837 A (DELCARDAYRE STEPHEN B ;MAXYGEN INC (US); MINSHULL JEREMY (US); NES) 23 July 1998 (1998-07-23) page 28, line 19 -page 31, line 37	1-60
X	WO 98 31816 A (MINSHULL JEREMY S ;SOUZA MERVYN L DE (US); UNIV MINNESOTA (US); SA) 23 July 1998 (1998-07-23) the whole document	1-3, 28, 30, 35, 37
X	MOURAD, G., ET AL.: "Intragenic recombination in the CSR1 locus of Arabidopsis" MOL. GEN. GENET., vol. 243, 1994, pages 178-184, XP002128867 the whole document	1

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Further documents are listed in the continuation of box C.



Patent family members are listed in annex.

## \* Special categories of cited documents: - - - - -

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "A" document member of the same patent family

Date of the actual completion of the international search

28 January 2000

Date of mailing of the international search report

11/02/2000

Name and mailing address of the ISA

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## INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 99/18394

C(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No
X	LEE, K.Y., ET AL.: "Homologous recombination in plant cells after Agrobacterium-mediated transformation" PLANT CELL, vol. 2, May 1990 (1990-05), pages 415-425, XP002128868 the whole document	1
X	ENGELS, P., ET AL.: "Comparison of homologous recombination frequencies in somatic cells of petunia and tobacco suggest two distinct recombination pathways" THE PLANT JOURNAL, vol. 2, no. 1, 1992, pages 59-67, XP002128869 the whole document	1
P,X	WO 99 07865 A (KIMERAGEN INC) 18 February 1999 (1999-02-18) the whole document	1
P,X	WO 98 54330 A (EVANS IAN JEFFREY ;HAWKES TIMOTHY ROBERT (GB); ZENECA LTD (GB); GR) 3 December 1998 (1998-12-03) the whole document	1
P,X	WO 99 25853 A (BASZCZYNSKI CHRISTOPHER L ;PIONEER HI BRED INT (US); DUESING JOHN) 27 May 1999 (1999-05-27) the whole document	1
A	MAJUMDER, K., ET AL.: "Background-minimized cassette mutagenesis by PCR using cassette-specific selection markers: a useful general approach for studying structure-function relationships of multisubstrate enzymes" PCR METHODS AND APPLICATIONS, vol. 4, 1995, pages 212-218, XP002128870 the whole document	21,22, 47,48
A	CRAMERI A ET AL: "DNA SHUFFLING OF A FAMILY OF GENES FROM DIVERSE SPECIES ACCELERATES DIRECTED EVOLUTION" NATURE, GB, MACMILLAN JOURNALS LTD. LONDON, vol. 391, 15 January 1998 (1998-01-15), pages 288-291, XP000775869 ISSN: 0028-0836 the whole document	1-60
A	WO 97 35966 A (MAXYGEN INC ;MINSHULL JEREMY (US); STEMMER WILLEM P C (US)) 2 October 1997 (1997-10-02) page 30, line 25 -page 31, line 30	1-60

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International Application No

PCT/US 99/18394

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 97 20078 A (AFFYMAX TECH NV ; CRAMER ANDREAS (US); STEMMER WILLEM P C (US)) 5 June 1997 (1997-06-05) the whole document	1-60
A	WO 98 27230 A (MAXYGEN INC ; PATTEN PHILLIP A (US); STEMMER WILLEM P C (US)) 25 June 1998 (1998-06-25) the whole document	1-60
A	WO 92 06201 A (MONSANTO CO) 16 April 1992 (1992-04-16) the whole document	21,22, 47,48
A	EP 0 293 358 A (MONSANTO CO) 30 November 1988 (1988-11-30) the whole document	21,22, 47,48